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The University of Maine
Studies

No. 4

A Catalogue and Bibliography of the Odonata (Dragon-flies) of Maine,

With an Annotated List of their Collectors

BY

FRANCES LEROY HARVEY

Professor of Natural History

ORONO, MAINE
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Most of the papers left by the late Professor Harvey have been published in the *Entomological News*. The local interest attaching to this paper made its publication in Maine desirable. The proof has been read by L. H. Harvey, of the class of 1901.

A CATALOGUE AND BIBLIOGRAPHY OF THE ODONATA (DRAGON-FLIES) OF MAINE, WITH AN ANNOTATED LIST OF THEIR COLLECTORS

SUBFAMILY I. CALOPTERYGINÆ.

1. CALOPTERYX LEACH.

1. *Calopteryx maculata* Beauv.

   Maine (Proc. B. S. N. H. 15: 273; no authority, but probably Packard); Manchester (Miss Wadsworth); Orono, Bradley, S. Lagrange, Foxcroft, N. E. Carry (Harvey); Farmington (Miss Furbish); Mt. Desert (Bullock).

2. *C. aequabilis* Say.

   Maine (Proc. B. S. N. H. 15: 274, no authority); Orono, Bradley, S. Lagrange, Foxcroft (Harvey); Manchester (Miss Wadsworth).

2. HETÆRINA HAGEN.

3. *Hetærina Americana* Fabr.

   Norway (Smith); Bradley, 1897, Auburn, 1898 (Merrill); Winslow, 1899 (Hitchings); Chemo Mills (Harvey).

SUBFAMILY II. AGRIONINÆ.

3. LESTES LEACH.

4. *Lestes congener* Hagen.

   Orono, 1899; N. W. Carry, 1898 (Harvey); Manchester 1898 (Miss Wadsworth).

5. *L. unguiculatus* Hagen.

   Orono, N. W. Carry (Harvey); Manchester (Miss Wadsworth); York Harbor (Moore).

6. *L. uncatus* Kirby.

   Orono (Bartle & F. L. Harvey); Manchester (Miss Wadsworth).

7. *L. disjunctus* Selys.
Manchester (Miss Wadsworth); Orono, Fryeburg (Harvey).
8. *L. forcipatus* Rambur.
Orono, Fryeburg (Harvey); Manchester (Miss Wadsworth).
9. *L. rectangularis* Say.
Orono, Fryeburg (Harvey); Manchester (Miss Wadsworth).
10. *L. vigilax* Selys.
Manchester, (Miss Wadsworth); Fryeburg (Harvey).
11. *L. inequalis* Walsh.
Orono, Bradley (Harvey); Manchester (Miss Wadsworth).

4. ARGIA RAMBUR.

12. *Argia putrida* Hagen.
Orono and many other localities (Harvey). Manchester (Miss Wadsworth).
13. *A. violacea* Hagen.
Orono, Bradley, etc. (Harvey); Manchester (Miss Wadsworth; Mt. Desert (Bullock).
14. *A. apicalis* Say.
Orono, (Harvey).

5. ERYTHROMMA CHARPENTIER.

15. *Erythromma conditum* Hagen,
Manchester (Miss W.); Bradley & Orono (Harvey).

6. NEHALENNIA SELYS.

16. *Nehalennia irene,* Hagen.
Maine (Packard); Manchester (Miss Wadsworth); Orono, Fryeburg (Harvey); York Harbor (Moore).
17. *N. posita* Hagen,
Orono, Penobscot River 1897 (Bartle Harvey).

7. AMPHIAGRION SELYS.

18. *Amphiagrion saucium* Burmeister.
Maine (Packard); Manchester (Miss Wadsworth); Orono (Bartle Harvey); Bradley (Harvey).

8. ENALLAGMA CHARPENTIER.

19. *Enallagma civile* Hagen.
Orono (Harvey); Manchester (Miss Wadsworth); York Harbor (Moore).

20. *E. ebrium* Hagen,
Manchester (Miss Wadsworth).

21. *E. cyathigerum* Charp., race annexum Hagen,
Manchester (Miss Wadsworth).

22. *E. Calverti,* Morse,
Orono 1897 (Florence Harvey); 1898 (Harvey).

23. *E. Hageni* Walsh,
Orono, Fryeburg (Harvey); Manchester (Miss Wadsworth); Mt. Desert (Bullock); York Harbor (Moore).

24. *E. geminatum* Kellicott,
Bradley, Chemo Mills (Harvey).

25. *E. signatum* Hagen,
Bradley (Harvey); Manchester Miss Wadsworth).

26. *E. pollutum* Hagen,
Chemo stream, Bradley (Harvey); Manchester (Miss Wadsworth).

27. *E. exsulans* Hagen.
Manchester, 1891 (Miss Wadsworth); Orono, 1898 (Harvey).

9. ISCHNURA CHARPENTIER.

28. *Ischnura verticalis* Say.
Maine, 1836 (Randall; Proc. B. S. N. H. 15: 276) Orono, Fryeburg (Harvey); Manchester (Miss Wadsworth); Mt. Desert (Bullock); York Harbor (Moore).

29. *I. Ramburii* Selys.
Manchester (Miss Wadsworth).

10. ANOMALAGRION SELYS.

30. *Anomalgrion hastatum* Say.
Maine. Hagen's synopsis p. 77 (Packard). Has not been re-discovered.

SUBFAMILY III. GOMPHINÆ.

11. HAGENIUS SELYS.

31. *Hagenius brevistylus* Selys.
Bradley, Orono, Greenfield, N. E. Carry (Harvey); Manchester (Miss Wadsworth).

12. OPHIOGOMPHUS SELYS.

32. *Ophiogomphus rupinsulensis* Walsh.
Maine (Packard, Proc. Acad. Nat. Sci. Phila. 1862, p. 388. Also by Morrison, teste Selys 1878).

33. *O. aspersus* Morse.
Russell Stream, Aug. 1899 (Harvey).

34. *O. carolus* Needham.
Orono ♀ (Florence Harvey) ♂ (Ned Mansfield); Greenfield, Bradley (Harvey).

35. *O. mainensis* Packard.
Maine (Packard. Proc. Ent. Soc. Phila. 1863, p. 255).

36. *O. anomalus* Harvey.
Orono (Harvey).

37. *O. johannus* Needham.
Chemo Mill, Bradley, 1899 (Harvey).

13. GOMPHUS LEACH.

38. *Gomphus nævus* Hagen.
Chemo Stream, Bradley, a single ♀ 1890, (Harvey); 1897-9 Many males and a few females (F. L. & Bartle Harvey).

39. *G. parvulus.* Selys.
Maine (Hag. Syn. Odon. of Am. p. 46, 1875; no authority); Manchester (Miss Wadsworth).

40. *G. abbreviatus* Hagen.
Orono (Harvey); Manchester (Miss Wadsworth, teste P. P. Calvert).

41. *G. brevis* Selys.
Orono (Harvey).

42. *G. exilis* Selys.
Orono (Harvey); Manchester (Miss Wadsworth); Mt. Desert (Bullock).

43. *G. spicatus* Selys.
S. Lagrange, Orono, Oldtown (Harvey); Manchester (Miss Wadsworth).

44. *G. Scudderi* Selys.
Russell stream near N. E. Carry, one male, 1897, many males and females, Aug. 25-29, 1899 (Harvey).

14. DROMOGOMPHUS SELYS.

45. *Dromogomphus spinosus,* Selys.
Manchester (Miss Wadsworth); Old Hown, Pushaw Pond, Aug. 16, 1898, a single ♂ (Harvey).

SUBFAMILY IV. CORDULEGASTERINÆ.

15. CORDULEGASTER LEACH.

46. *Cordulegaster maculatus* Selys,
Greenfield, Orono (Harvey); Manchester (Miss Wadsworth).

47. *C. Sayi,* Selys.
Portland (Packard, Hag. Syn. O. of A. p. 50, 1875).

48. *C. diastatops* Selys.
Manchester (Miss Wadsworth); Orono, Greenfield, Bradley (Harvey).

49. *C.* (Taeniogaster) *obliquus,* Say.
Orono, Me. (Packard, see Proc. B. S. N. H. 16: 356); Manchester (Miss Wadsworth); Orono & Bradley (Harvey).

SUBFAMILY V. AESCHINÆ.

16. EPIAESHNA SELYS.

50. *Epiaeschna heros* Fabricius.
Maine (Proc. B. S. N. H. 15: 272, no authority); 1899 (Harvey).

17. BOYERIA MCLACHLAN.

51. *Boyeria vinosa* Say.
Maine (Proc. B. S. N. H. 15: 272, no authority); Orono, Greenfield, N. E. Carry, etc. (Harvey); Manchester (Miss Wadsworth).

18. GOMPHÆSCHNA SELYS.

52. *Gomphæschna furcillata* Say.
Manchester (Miss Wadsworth).

19. BASIÆSCHNA SELYS.

53. *Basiæschna Janata* Say.
Orono, Bradley (Harvey); Manchester (Miss Wadsworth).

20. ÆSCHNA FABRICIUS.

54. *Æschna juncea* var *verticalis* Hagen.
Maine (Smith? Hagen's Syn. Od. of A. p. 34); Manchester (Miss Wadsworth); Orono, Bradley (Harvey).

55. *Æ. clepsydra* Say.
Maine (Proc. B. S. N. H. 15: 271, 1873, no authority). Orono, S. Lagrange in ponds, Bradley, Greenfield, etc. (Harvey).

56. *Æ constricta* Say.
Maine (Smith? Synopsis Od. of A. Hagen p. 34); Manchester (Miss Wadsworth); Orono, N. E. Carry, Kineo, Fryeburg, etc. (Harvey).

21. ANAX LEACH.

57. *Anax junius* Drury.
Orono (Harvey); Manchester (Miss Wadsworth).

SUBFAMILY VI. CORDULINÆ.

22. DIDYMOPS RAMBUR.

58. *Didymops transversa* Say.
Manchester (Miss Wadsworth); Orono (Harvey).

23. MACROMIA RAMBUR.

59. *Macromia illinoensis* Walsh.
Manchester (Miss Wadsworth); Orono, Bradley (Harvey).

24. CORDULIA LEACH.

60. *Cordulia shurtleffi* Scudd.
Orono (Bartle Harvey); Bradley (Harvey).

25. EPICORDULIA SELYS.

61. *Epicordulia princeps* Hagen.
Manchester (Miss Wadsworth).

26. TETRAGONEURIA HAGEN.

62. *Tetragoneuria cynosura* Say.
Maine (Hag. Syn. O. of A. 1875, p. 60, no authority); Bradley (Harvey); Manchester (Miss Wadsworth).

63. *T. spinigera* Selys.
Manchester (Miss Wadsworth); Bradley (Harvey).

64. *T. semiaquea* Burmeister.
Manchester (Miss Wadsworth); Mt. Desert (Bullock).

27. NEUROCORDULIA SELYS.

65. *Neurocordulia uhleri* Selys.
Orono (Packard, Hag. Syn. O. of A. 1875, p. 61); Orono Harvey); Manchester (Miss Wadsworth).

66. *N. obsoleta* Say.
Manchester, July 5th (Miss Wadsworth).

67. *N. yamaskanensis* Provancher.
Orono, 1898 ♂ (L. H. Harvey); ♀(Harvey), several in 1899 (Harvey).

28. SOMATOCHLORA SELYS.

68. *Somatochlora elongata* Scudd.
Coast of Maine at sea (Harvey).

69. *S.* elongata var. *minor* Calvert.
Over Penobscot River, Orono, Bradley (Harvey).

70. *S. linearis* Hagen, (Probably).
Manchester, July 27, 1897 (Miss Wadsworth).

71. *S. forcipata* Scudd.
Maine (Randall, 1836. Proc. B. S. N. H. 15: 268); Orono, Bradley (Harvey); Manchester (Miss Wadsworth).

72. *S. septentrionalis* Hagen.
Orono, 6-18-1898 (Bartle Harvey). Over swamp.

73. *S. walshii* Scudd.
Manchester (Miss Wadsworth); Orono (L. H. Harvey); Bradley (Harvey).

74. *S. lepida* Selys.
Portland (Jones and probably Randall. Proc. B. S. N. H. 15: 270); Greenfield, Bradley, Orono (Harvey); Manchester (Miss Wadsworth).

75. *S. libera* Selys.
Orono (Bartle Harvey); Greenfield (Harvey); Manchester (Miss Wadsworth).

SUBFAMILY VII. LIBELLULINÆ.

29. LIBELLULA LINNÉ.

76. *Libellula exusta* Say.
Norway (Smith. Hag. Syn. O. of A. 1875 p. 69). Manchester (Miss Wadsworth).

77. *L. incesta* Hagen.
Manchester (Miss Wadsworth).

78. *L. 4-maculata* Linné.
Manchester (Miss Wadsworth); Orono, Bradley (Harvey); Mt. Desert (Bullock) Miller) (var. pranubila Newman. Orono (Harvey).

79. *L. pulchella* Drury.
Brunswick (Proc. B. S. N. H. 16: 367); Orono, Bradley (Harvey); Manchester (Miss Wadsworth).

80. *L. semifasciata* Burmeister.
Manchester (Miss Wadsworth); Orono, June 1898 (Harvey).

30. PLATHEMIS HAGEN.

81. *Plathemis trimaculata* De Geer.
Maine (Hag. Syn. O. of A. 1875 p. 67, no authority); Orono, Bradley (Harvey); Manchested (Wiss Wadsworth); Mt. Desert (Bullock); Bar Harbor (Miller).

31. NANNOTHEMIS BRAUER.

82. *Nannothemis bella* Uhler.
Maine (Packard); Mt. Desert (Bullock).

32. CELITHEMIS HAGEN.

83. *Celithemis ornata* Rambur.
Manchester (Miss Wadsworth); Bradley (Bartle Harvey).

84. *C. elisa* Hagen.
Bradley (Harvey); Manchester (Miss Wadsworth); Mt. Desert (Bullock).

33. LEUCORHINIA BRITTINGER.

85. *Leucorhinia intacta* Hagen.
Orono, Bradley (Harvey); Manchester (Miss Wadsworth).

86. *L. hudsonica* Selys.
Oldtown, Orono (Harvey).

87. *L. proxima* Calvert.
Manchester (Miss Wadsworth); Old Town, Orono (Harvey).

88. *L. frigida* Hagen.
Bradley (Harvey & Bartle Harvey); Mt. Desert (Bullock).

89. *L. glacialis.*
Orono, Bradley, Chemo Stream (Harvey).

34. SYMPETRUM NEWMAN.

90. *Sympetrum rubicundulum* Say.
Maine (Proc. B. S. N. H. 15: 267, no authority); Manchester (Miss Wadsworth); N. W. Carry, South Lagrange, Greenfield, Bradley, Orono, Fryeburg, etc. (Harvey); York Harbor (Moore).
Greenfield, Bradley, Orono, Fryeburg, etc. (Harvey); York Harbor (Moore).

91. *S. obstrusum* Hagen.
York Harbor (Moore); Fryeburg (Harvey).

92. *S. semicinctum* Say.
Maine (Randall. Proc. B. S. N. H. 15: 267); Orono, Bradley (Harvey); Manchester (Miss Wadsworth); York Harbor (Moore).

93. *S. vicinum* Hagen.
Brunswick (Packard Hag. Syn. O. of A. p. 80); Manchester (Miss Wadsworth); Orono, Bradley, Fryeburg (Harvey); York Harbor (Moore).

94. *S. costiferum* Uhler.
Maine (Hag. Syn. O. of A. p. 81, no authority); Orono, Bradley (Harvey); Manchester (Miss Wadsworth); York Harbor (Moore).

BULLOCK, DAVID JAYNE.

1. Notes on Mt. Desert Dragon-flies. Ent. News, 2: 93. 1891.

CALVERT, PHILIP P.

1. Notes on N. Am. Odonata. Trans. Am. Ent. Soc. 17: 33-40. 1890. Maine species collected by Miss Wadsworth at Manchester are considered.
2. Data on the Distribution of Dragon-flies (Odonata) 1. Ent. News, 5: October, 1894. Mentions papers on Odonates by Miss Wadsworth, and Mr. D. J. Bullock, F. L. Harvey, besides giving lists of species collected at Mt. Desert by Bullock, and at York Harbor by J. P. Moore.
3. Catalogue of the Odonata of the Vicinity of Phila., Pa. Trans. Am. Ent. Soc. 20: 1893. Maine species mentioned for geographical distribution.

HAGEN, HERMAN A.

1. Synopsis of the Neuroptera of North America, Smithsonian Institution, Washington, D. C. 1861. Mentions species collected in Maine by Prof. A. S. Packard.
2. On the Neuroptera in Harris' Collection. Proc. Bost. Soc. Nat. Hist., 15: 1873. Ten species from Maine are mentioned, three of which are credited to John Witt Randall, one to K. T. Jones, and the others are without authority.
3. Odonate Fauna of Georgia. Proc. Bost. Soc. Nat. Hist., 16: 1874. Two Maine species mentioned, one credited to Packard and the other without authority.
4. Synopsis of the Odonata of America. Proc. Bost. Soc. Nat. Hist. 18: 20-96, 1875. Twenty-one species are mentioned including several recorded in previous papers. For several species only the State is given and for all no authority. Orono, Brunswick, Norway, and Portland are localities mentioned and would suggest Packard, Smith, Jones, Morse, and probably Randall as the collectors.

5. Synopsis of the Odonata of North America No. I. Psyche, 5: 241. 1889. Two Maine species mentioned.
6. Synopsis of the Odonate Genus Leucorhinia Britt. Trans. Am. Ent. Soc. 22: 229-230. 1890. Two Maine species mentioned in notes by Mr. Calvert.
7. Notes and Descriptions of some North American Libellulina. Psyche 5: 383. 1890. One species from Maine mentioned as collected by Smith or L. Agassiz.

HARVEY, FRANCIS LEROY.

1. A contribution to the Odonata of Maine. Ent. News, 2: 50, 73. 1891.
2. Contributions to the Odonata of Maine—II. Ent. News, 3: 91, 116. 1892.
3. Contributions to the Odonata of Maine—III. Ent. News, 9: 59, 85. 1898.
4. Contributions to the Odonata of Maine—IV. Ent. News, 12: 1901.

KIRBY, W. F.

1. A Synonymic Catalogue of Odonata or Dragon-flies, London, 1890. Mentions some species from Maine.

WADSWORTH, MISS MATTIE.

1. List of the Dragon-flies (Odonata) taken at Manchester, Kennebec Co., Me., in 1888 and 1889. Ent. News. 1: 36, 55. 1890.
2. Additions and Corrections to the above. Ent. News, 2: 11. 1891.
3. Second Additions and corrections to the above. Ent. News 3: 8. 1892.
4. Third Additions to the above. Ent. News 9: 111. 1898.
5. Fourth Addition to the above. Ent. News. ix, p. 111, 1898.

WALSH, BENJAMIN D.

1. Observations on certain N. A. Neuroptera by H. Hagen, M. D. Translated from the original French MS and published by permission of the author with notes and descriptions of about twenty new N. A. species of Pseudoneuroptera. Proc. Ent. Soc. Phila., 2: 107-272. 1863 *Ophiogomphus Mainensis,* Packard described p. 255.

Randall, Dr. John Witt. Earliest collector of insects in Maine, 1836-40. Specimens sent to Thomas W. Harris and credited to Randall in his MS catalogue. He collected coleoptera mostly, but also insects of other orders, including a few Odonates. He published a paper "Description of New Coleoptera from Maine." (Bost. Jour. Nat. Hist. Vol. 2.)

Packard, Prof. Alpheus Spring. Began gathering insects in Maine when only 16 years old; collected during his college course 1858-61, and until 1864 at Brunswick mostly. Also at Orono and in Northern Maine while on the Geological Survey, August and September 1861. Collected in all orders. Uhler named his Odonates. Specimens went first to the Peabody Academy of Science and afterwards to the Cambridge Museum. Author of many articles bearing upon the Insects of Maine.

Morse, Prof. Edward Sylvester. Collected in the vicinity of Portland, Maine from 1856-62 in all orders. Specimens went to Museum of Comparative Zoology, Cambridge, Mass.

Smith, Prof. S. I. Made large collections in all orders at Norway, Maine. His specimens are now in the Museum of Comparative Zoology, Cambridge, Mass. Prof. Smith is the author of a paper, "Orthoptera of Maine." published in the Proc. Portland Soc'y Nat. Hist. Vol. I.

Agassiz, Prof. Louis. Is credited with an Odonate collected at Bethel, Maine.

Verrill, Prof. A. E. May have collected insects in Maine at Norway between 1858-61; if so, they probably went to the Cambridge Museum.

Jones, Thomas K., Portland. An amateur collector particularly of beetles. He donated a fine collection of Maine beetles to the Portland Society of Natural History. The present secretary writes, "They have gone the way of all insect collections not having daily care." Odonates were collected somewhat and the specimens, we think, went to the Cambridge Museum, as Mr. Jones is mentioned by Dr. Hagen. Mr. Jones is a sign

painter by trade and has collected insects many years. Has been an active member of the Portland Society of Natural History and once its secretary.

Morrison, H. K. Is credited with collecting *Ophiogomphus rapinsulensis* in Maine. (See Selys Quatriemes Additions au Synopsis des Gomphines, Brussels, 1878: 50.)

Fernald, Prof. C. H. Orono and vicinity, while connected with the Maine State College from 1871-86. Specimens in collection of University of Maine, as reported by the present writer in Entomological News, are without collector's name, but we presume were collected by Prof. Fernald or his pupils.

Wadsworth, Mattie E. Manchester, Kennebec Co. from 1890 to date. Results published in Entomological News. (See Bibliography).

Harvey, Prof. F. L. Orono, Me. and various localities in the Penobscot valley 1886-1899. Results published in Entomological News. (see Bibliography.)

Moore, Dr. J. Percy. Instructor of Zoology, University of Pennsylvania, Philadelphia. Collected at York Harbor, Maine, in summer of 1890. Specimens given to Mr. P. P. Calvert and reported by him in Ent. News. 5: 242. 1894. (See Bibliography).

Bullock, David Jayne. Lives (1901) in Philadelphia, Pa. Collected in vicinity of Bar Harbor, in 1890. Specimens reported by collector.

Specimens collected in 1891 were reported by Mr. P. P. Calvert in Ent. News, 5: 242, 1894. (See Bibliography.)

Collections made by the following persons have been examined by the writer and reported by him: Mr. and Mrs. Anson Allen, Orono; Miss Kate Furbish, Rangeley region; Mr. E. D. Merrill, Auburn, Monmouth and Orono; P. L. Ricker, Westbrook; LeRoy H. Harvey, Bartle F. Harvey, Miss Florence Harvey, and Willis L. Harvey, Orono, Bradley, Greenfield, and other localities in the Penobscot valley.

We know of Maine Odonates in the collections of other Entomologists of the state, but have not examined them critically. Miss Mattie Wadsworth, David Jayne Bullock and the writer are the only collectors of Odonates of Maine who have published their results.

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